

REMARKS

Reconsideration and further examination is respectfully requested.

Rejections under 35 U.S.C. §102

Claims 1, 3-12, 18-36 and 46-65 were rejected under 35 U.S.C. §102(b) as being anticipated by Ballardie (Network Working Group, University College of London, May 1996).

Ballardie:

Ballardie purports to provide a scalable solution to the multi-cast key distribution problems in the art, in particular using a Core Based Tree (CBT) multicast protocol. Ballardie describes, at page 2, 'how the CBT multicast protocol can provide for the secure joining of a CBT group tree.' Ballardie describes:

"... A shared multicast delivery tree is built around several so-called core routers. A group receiver's local multicast router is required to explicitly join the corresponding delivery tree after receiving an IGMP [8] group membership report over a directly connected interface. A CBT join message is targeted at one of the group's core routers...." (Ballardie, section 2, paragraph 2).

At pages 9-11, Ballardie describes the process of joining a multicast group in more detail:

"In the diagram, host h wishes to join multicast group G. Its local multicast router (router A) has not yet joined the CBT tree for the group G.... Immediately subsequent to a multicast application starting upon host h, host h immediately sends an IGMP group membership report, addressed to the group. In response to receiving the IGMP report, the local designated router (router A) authenticates the host's enclosed token. If successful, router A formulates a CBT join-request, whose target is core C (the primary core). Router A includes its own token in the join, as well as the signed token received from host h. *The join is digitally signed by router A.*"

In order to support a rejection under 35 U.S.C. §102(b), *every* limitation in the claims should be shown or suggested by the references. Applicants submit that the Ballardie reference fails to meet this burden with regard to Claim 1, as the join message, that is forwarded to the primary core router C, is “digitally signed by router A” neither shows nor suggests the limitation of “the rendezvous point device receives the encoded join request and authenticates the encoded join message *using the authentication key associated with the host device...*” Ballardie is fundamentally different than the claimed invention, as join request sent by the local designated router is digitally signed using the router authentication information, *not* the “authentication key associated with the host device...” Accordingly, for at least the reason that Ballardie fails to describe or suggest all the limitations of claim 1, it is respectfully requested that the rejection be withdrawn.

In response to Applicants’ argument, the Examiner states, at page 2 of the office action:

“... However, Ballardie teaches that the tree joining process is secure. On page 10, Ballardie disclose the tree joining process is secure by digitally signing the message will inherently require an authentication key in order to verify whether the message has been altered. Furthermore, on page 2, second paragraph, Ballardie discloses “the secure joining implies the provision for authentication... the scheme we describe provides for the authentication of tree nodes (routers) and receivers (end systems) as part of the tree joining process. Key distribution (optional) is an integral part of secure joining.” Therefore, Ballardie does teach authentication key being distributed in order to ensure the transmission of the joined message is secure. In light of this interpretation, the limitation is met....”

Applicants respectfully submit that the Examiner is failing to accurately apply a 35 U.S.C. §102 rejection. As stated above, in order to satisfy a rejection under 35 U.S.C. §102, *every* limitation should be shown or suggested in the claims. Thus, it is not enough that Ballardie mention the term ‘secure joining’, but rather, in order to be a proper reference under 35 U.S.C. §102, the reference should show or suggest *every* limitation in the claims. Ballardie fails to do so.

In addition, although the Examiner states that ‘Ballardie teaches “...the scheme we describe provides for the authentication of tree nodes (routers) and receivers (end systems) as part of the tree joining process...” such a description falls short of authenticating the actual ‘host join’ messages ‘*at the rendezvous point...*’ as recited in the claims of the present invention. Accordingly for at least the reason that Ballardie fails to describe or suggest every limitation of the claim, it is requested that the rejection be withdrawn. Dependent claims 3 and 5-12 serve to add further patentable limitations to claim 1 and are therefore allowable for at least the same reasons claim 1.

Independent claims 20, 22, 29 and 32:

Each of the independent claims 20, 22, 29 and 32 have been amended to include a limitation of or similar to “...forwarding of the join message to a rendezvous point, *to enable authentication of the join message at the rendezvous point using the authentication key associated with the host device...*” Again, the Examiner has failed to give patentable weight to the language of the claims; but instead has pointed out that Ballardie has a secure joining process, although it differs from the claimed invention. Such reasoning does not support a rejection under

35 U.S.C. §102. Accordingly, for at least the reason that Ballardie fails to disclose the core router authenticating the join using the host authentication key, claims 20, 22 and 29 are patentably distinct over Ballardie. In addition, their respective dependent claims 21, 23-28 and 30-31 and 33-36 are patentable for at least the same reasons as their parent independent claims. Independent claims 48, 53, 58 and 65:

Independent claims 48, 53, 58 and 65 have each been amended to include a limitation of “...authenticating the encoded join request *using the host device authentication key...*” As described above, Ballardie explicitly states that the join is digitally signed by the designated router. Accordingly, for reasons similar to those put forth with regard to claim 1, claims 48, 53, 58 and 65 are patentably distinct over Ballardie. In addition, their respective dependent claims are patentable for at least the same reasons as their parent independent claims.

Conclusion:

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully submitted,

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Date

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